0515, Blackford County Schools

PROJECT ABSTRACT

This project targets improvement in math and English student achievement, which typically has hovered around the state average passing rates and shown little improvement. The project will affect teaching strategies by expanding the use of Smart Board technology to all schools in this district, i.e., SMART Boards will be installed at two additional schools, and by making student individual response systems (¿clickers¿) available to all math and English classes. Secondary students will also be able to access this highly motivating whiteboard technology outside of their classrooms, preparing their own presentations and manipulating programs that have until now only been available on the teacher¿s SMART Board within the classroom setting. Students will be able to use this student edition software on their own stations or on their home computers.

The student response portion of the new software allows every student in a classroom to respond to specific lesson content immediately, either as part of the unfolding of the lesson or as an assessment of the learning that took place. The individual student responses are anonymously flashed on the Smart Board and tallied, thus giving a student immediate feedback on his/her understanding and giving the teacher feedback on the total group¿s understanding. This feedback, allows the student to check his/her own understanding frequently. It also allows the teacher to make data-based decisions as to the next steps in learning by deciding to re-teach a concept, to provide additional practice, to tutor specific students, and/or to move to a new lesson. This formative assessment data can help track and graph students¿ progress on designated indicators in their math and English/language arts classes during teaching units and, along with teacher and peer conferencing, help students adjust their study plans to support continued progress.

Teachers will receive professional development that includes training on using the software and envisioning additional uses for the student edition of Smart Boards and for the individual response portion of the technology. In order to most effectively use the response portion of the technology, teachers will also have training on formulating effective questions to monitor student learning and support higher order thinking, will collaborate in writing effective questions that specifically monitor students¿ writing, reading, and math skills, will analyze their classroom data periodically, and have support sessions with the consultant who provides the training on effective questioning. As a partnering district, additional Yorktown Community Schools teachers will also train on the use of the clickers and on effective questioning. Yorktown will develop online trainings and online lessons integrating the technology that will be available to Yorktown and Blackford teachers alike.

In Classroom Instruction That Works, Robert Marzano quotes researcher John Hattie, who analyzed almost 8,000 educational studies: ¿The most powerful single modification that enhances achievement is feedback. The simplest prescription for improving education must be `dollops of feedback.¿¿ The student response system part of this project is one way to provide that formative assessment in a student motivating, teacher friendly way. The goal is to increase by 3% the number of students performing on grade level by the fall of 2009 as measured by NWEA scores in reading and math.

NEEDS/BASELINE

Seventy percent of Blackford County students passed the English/language arts portion of the spring 2009 ISTEP+ and 71% passed the math portion. Thus, the pass rate is closer to the state pass rate than it has ever been. However, the rate of increase has been quite slow. This district also administers NWEA testing to third through ninth grade students three times per year. These NWEA data yielded similar results for the spring 2009 administration in math; the reading is 3% lower than the ISTEP+ English/language arts. The fall 2009 administration drops an additional 3% from spring in reading and increases 2% in math:

NWEA Data

	Reading	Math
On or Above Grade Level	On or Above Grade Level	
Spring 2009	67	72
Fall 2009	64	73

The three secondary schools involved in this project have failed to make AYP over the past several years, usually missing the mark with special needs students and/or low SES students in English/language arts and/or math. The elementary schools also struggle to meet the cut scores for special needs students. The student population, in fact, has seen increased numbers of at-risk students in these two subgroups at all schools over the past five years: the percentage of students on free/reduced lunches has increased to 49% (from 40%) for students in the ISTEP+ testing grades and the percentage of special needs students has increased to 19% (up from 16%) in these grades. These are the two subgroups that continue to struggle in passing the ISTEP+, particularly in English/language arts:

	F/R % Passing ELA	Sp Ed % Passing ELA
Grades 3-8, Spring 2009	59	44
Grade 10, Fall 2008	44	13

In mathematics, both subgroups are performing at a higher level but in the middle school years having more difficulty making the AYP cutoffs:

	F/R % Passing Math	Sp Ed % Passing Math
Grades 3-5, Spring 2009	65	47
Grade 10, Fall 2008	46	17

SAT data for Blackford High School is below the state average and has been so for several years:

With 41% of seniors taking the SAT (state 58%), the Critical Reading score for 2007-08 was 468 (state average 497) and the Math score was 478 (state average 507).

In addition to language arts and math skills, students struggle with several work-related planning skills, particularly evident among free/reduced lunch students. During a previous series of professional development workshops, teachers learned that these types of skills that are considered part of the repertoire of strategies with which middle and high SES children have come to school (often called kindergarten readiness skills) are not strategies that children from low SES households learn at home. These strategies include goal setting, planning backwards, and focusing.

Principals¿ walkthrough observations also suggest that many teachers are continuing to use whole class instructional strategies. Teachers also continue to rely on their perceptions of students¿ understanding based on classroom discussions (rather than hard data) to determine whether to re-teach or to move on.

Both subgroups of low SES and of special needs students appear to need the kinesthetic activity that clickers and Smart Boards allow in order to focus. They also need ways to visualize their own progress, to plan for and to readjust their plans for reaching their academic goals based on immediate feedback.

GOALS/OBJECTIVES

The ultimate goal is to increase the percentage of students who meet the Indiana Academic Standards as measured by the ISTEP+ in both English/language arts and math. That increase will be accomplished by using the clicker/Smart Board technology to increase the amount, the specificity, and the timeliness of individual and classroom feedback on new concepts and developing skills, to increase student goal setting by using that feedback data to support individual student planning, and to increase student focus and motivation through technology-based activities. Teachers can also adjust instruction to meet the needs of their students as indicated by the data.

Goal 1: By the spring of 2011, 74% of students at Blackford County Schools will meet or exceed Indiana Academic Standards in English/language arts and math as measured by ISTEP+. This will include a 4% increase in the percent of low SES students and special needs students passing in each content area. This goal represents an average increase of 3-4% more students passing than in the spring of 2009 (the last test administration for which scores are available).

However, because ISTEP+ is administered infrequently, a more realistic measure of growth is a comparison of the growth from fall to winter to spring as measured by NWEA data, focusing on the spring comparisons from year to year.

Goal 2: By the fall of 2011, 68% of grades 3-9 students will meet or exceed the local standard for reading and 77% for math as measured by NWEA. This goal is a 3-4% increase over the fall 2009 NWEA scores.

Goal 3: By fall 2011, 85% of students will show evidence of classroom engagement and motivation to learn as measured by classroom walkthroughs and by student survey results.

One strategy that especially supports low SES students, who typically have not learned to plan backwards from the ultimate goal, is goal setting using concrete tracking techniques, such as yearly goal setting by each individual student.

Goal 4: By the fall of 2011, 75% of low SES and special needs students will be setting quarterly achievement goals and making an action plan for achieving those goals as measured by teachers¿ records.

METHODS/ACTIVITIES

During February 2010, consultants will train students and teachers in language arts and math classrooms in Blackford County Schools and Yorktown Community Schools to use the ¿clickers¿ to respond to assessment items. Blackford secondary teachers will also show students how to use the student edition (at-home edition) of the Smart Board software and how to track their own individual responses as a way to measure their individual progress. These activities will allow students to receive more feedback on their understanding, monitor their progress, and access a particularly motivating tool, the Smart Board, from locations outside the classroom.

In March and in September, teachers will participate in two half-day trainings: one on effective questioning techniques and a second on data analysis. Yorktown will develop online training modules as

alternative learning tools for both the initial training on the response system technology and for the effective questioning workshop. Both schools will have access to these modules. Blackford teachers will also collaboratively develop common assessment questions in October. Teachers will offer high quality questions via Smart Board-projected programs and then collect student responses through the use of the clickers. Both the class and the teacher will analyze the results in order to decide on the next instructional steps. A consultant will work individually with Blackford teachers to increase their capacity for effective questioning.

Students will continue to assess their own understanding of a lesson based on the immediate feedback of the clicker tabulations at least once during each during each unit of study. Monitoring the progress of students the Indiana Academic Standards will more clearly focus instruction and develop students¿ engagement and ownership in their own learning.

Our partnering school district, Yorktown Community Schools, will use the clicker system in the core content areas as well. Math and English/language arts will be their primary areas of focus in support of student progress monitoring. Teachers will use the clicker system for both formative and summative assessment purposes. This will guide adjustments in instruction and target re-teaching efforts and allow for enhanced student engagement. Our partners will continue to develop and share purposeful lesson plans which integrate such technology as will teachers in Blackford County Schools. Shared professional development, offered both traditionally at Blackford and later online through Yorktown's efforts, will be key. Yorktown will develop the online professional development in the areas of modeling effective use of the student response systems, effective relevant lesson planning integrating the technology, and effective peer review training. These modules will also serve as a jump-start for our partnering district to explore an online platform for further online student course development. This exploration and training will also be shared with Blackford County Schools, thus continuing the benefit of our partnership beyond the grant.

Our partners, too, have experience with the use of Smart Boards. This commonality will allow us to exchange effective technology-related lesson plans and assessments, share in relevant professional development, and embrace an exchange, particularly among advanced secondary students.

Students from each district will share their technology-related projects and develop effective peer review skills, thus increasing student achievement through their experience of teaching others, using peer evaluation techniques, and being taught other ways in which technology can enhance their projects by gaining input from neighboring students and teachers.

PROFESSIONAL DEVELOPMENT

This assessment initiative using Smart Board and clicker technologies will begin at Blackford County Schools during the 2010 spring semester. In February teachers will train to use the Smart Boards and the response devices. They will begin using activities that integrate these two technologies into their lesson plans. In March each language arts and math teacher will participate in a half-day workshop led by a consultant specializing in assessment. During this session, teachers will learn to write effective questions that can be used with the response system and that prioritize higher order thinking skills. In September they will learn to analyze the assessment results in order to make instructional decisions. Then teachers will collaborate to write additional effective and standards-based questions suitable for the response technology during a half-day work session in October. The consultant will also return in the fall for additional time to visit individual teachers in their classrooms and observe the quality and effectiveness of their questions and the use of those questions with the response system. Blackford teachers will collaborate with Yorktown teachers to develop and to peer review lesson plans that integrate this technology into the plan.

Our partner¿s district¿s professional development will first involve training their teachers on the technology, including developing an online archived version. This will be open to the personnel at both districts and available for future access beyond the grant timeline. The second phase of training will be the effective questioning training. Yorktown teachers will participate at Blackford and then develop an online version for access by both districts. The choice of training opportunities will provide more flexibility, be cost efficient, and expose teachers to online professional development opportunities.

The third stage of training for Yorktown will allow for lesson plan development. This time will provide an online platform for collaborative lesson plan development, which will also embrace interdisciplinary work. The lesson plans will integrate the Smart Board and student response technology, include collaborative review by teachers from both districts, and be made available to personnel in both districts. Once the online method of sharing such plans is established, this practice can continue beyond the grant timeline.

Language arts and math teachers, additional content area teachers, media specialists, principals, and district personnel will be involved in the trainings. The management team will evaluate the teacher feedback at the end of each session and adjust upcoming training plans with the consultant or online as needed.

The professional development will initially show teachers how to use the technology itself and then will support refinement of questioning skills and development of lesson plans integrating this technology.

Activity	Audience	Responsible	Outside Agency	Timeline
Training on Clickers	Math/ELA teachers BCS & YCS	BCS Tech. Dir. YCS Tech. Dir. YCS Asst. Supt.	SmartEd	February 6 days + Online
Effective Ques. Wkshop	Math/ELA Teachers BCS & YCS	BCS Dir. Inst. YCS Curr. Dir.	Michael Smith Consulting	Mar 4 days + Online
Effective Ques. Wkshop	Other core Teachers BCS & YCS	BCS Dir. Inst. YCS Curr. Dir.	Michael Smith Consulting	Mar 1 days + Online
Data Analysis Wkshop	Math/ELA BCS Teachers	BCS Dir. Inst.	Michael Smith Consulting	Sept. 4 days
Collaborative Ques. Writing	Math/ELA BCS Teachers	BCS Dir. Inst.		Oct. 4 days
Classroom Observ. days	Math/ELA BCS Teachers	BCS Dir. Inst.	Michael Smith Consulting	Oct.-Dec. 8
Tech. Lesson Planning	Core Content YCS Teachers	YCS Curr. Dir.		March 1 Day

Online PD Format YCS Admin. YCS.Tech. Dir. Dr. Jones, BSU Feb. 1 Day

Development

FORMATIVE/SUMMATIVE EVALUATION

The progress toward the first goal, that is, the increase in students¿ English/language arts and math achievement, will be measured at the end of each grading period by the increases in the percentages of students meeting grade level standards using common assessment questions. Each grading period should see an increase in the skill level and the number of students performing at a proficient level.

The increase in student achievement will also be measured through changes in students¿ NWEA scores on the math and reading subtests. All students took the test in the fall (pretest) and will take it again in mid-winter (benchmark point) and in the spring (posttest, both in 2009-10 and in 2010-11. The changes in the scores and in the number of students at a ¿proficient¿ level (defined locally as the 40%-ile) will increase if this project that concentrates on frequent collection and analysis of student data and the resulting targeted remediation is working.

The second goal of this project is to increase student engagement and student ownership of learning. Progress toward this goal will be measured by principal walkthrough data. The principal walkthroughs will check once each grading period for the number of students exhibiting ¿engaged¿ behaviors (based on Phil Schlechty¿s work). The results will be compiled and shared with the staff at data analysis sessions or faculty meetings so that program adjustments can be made.

A summative measure of student achievement will be the results of the spring 2010 ISTEP+ testing as a pretest compared with the spring 2011 percent passing. Final assessment of the project will take place in June 2011. Student ISTEP+ results will be analyzed to determine whether the number of students passing the English/language arts portion increased at least 3% in language arts and in math over the spring 2010 results.

LOCAL MATCH

This school district continues to support the acquisition of additional Smart Boards with the goal of having that technology in every classroom within the next few years. Over the past year, this district spent $54,135 from the Capital Projects fund and from Title I funds for 15 Smart Boards and the

accompanying software for core subject classrooms. This district anticipates spending $55,000 within the next year for another 15 Smart Boards at two elementary schools.

This district will also fund the training for two principals on effective walkthrough observations and follow-up training for six principals on assessing student engagement, $2500.

This district continues its commitment to using technology to enhance student achievement. The district provides training in the use of Smart Boards to increase student engagement in internet-based curriculum and will continue to do that through the new online opportunities developed as part of this grant proposal; it provides the Smart Board software and other hardware requirements; the Smart Board software itself links to resources for online lessons that are already keyed to the standards and benchmarks. This extensive Smart Board technology, in turn, provides the platform to add the additional layer of data collection and analysis to inform instructional decision-making through the use of the clicker systems proposed in this application.

PARTNERSHIPS

Our partner district is Yorktown Community Schools, a district of 2251 students, just slightly larger than Blackford County Schools. The spring 2009 ISTEP+ pass rate in language arts was 81% and in math 80%, i.e., 10% higher than Blackford County Schools. Sixty-three to 79% of Yorktown High School seniors take the SAT (41-59% at Blackford High School) with a combined score of 1024 for 2007-08 (Blackford High School 946).

Both districts have teachers who have been using Smart Boards in recent years and have expertise to share with each other. The two districts will be collaborating primarily through sharing professional development trainings, especially online; sharing and peer reviewing lesson plans that integrate the response system technology and other Smart Board applications into the plans; and at the high school level, sponsoring a student exchange in which students in advanced level classes will share their technology-enhanced projects at the partnering high school.

Our partnering school district¿s professional development will benefit Blackford County Schools. The first stage will involve training in the area of student response technology. The training will be offered in the traditional manner but will be also archived online for future access to personnel in both districts. Due to archiving, this training will be available beyond the grant timeline.

The second phase of mutually beneficial training will be the effective questioning training so that teachers can assess higher order thinking while using response system technology. This professional development will also be conducted in the traditional manner at Yorktown and also developed into an online training. A combination of both types of training will provide more flexibility for the teachers in both districts, be cost effective, and expose teachers to online professional development opportunities. This will allow for additional training for Blackford County staff that would otherwise be cost prohibitive.

The third stage of training will allow lesson plan development that integrates Smart Boards and the response system. Yorktown will provide an online platform for collaborative lesson plan development, which will also embrace interdisciplinary work. The lesson plans will integrate the student response technology and be made available to personnel in both districts. Once the online sharing such plans is established, this practice can continue beyond the grant timeline. This format will provide many teachers in both districts access to ready-made, proven lessons that integrate technology. This will save teachers time and further encourage the use of technology.

Lastly, the use of online professional development will be the result of exploration and implementation based on Yorktown¿s efforts. The development of such online teacher professional development in the areas of modeling effective use of the student response systems, effective relevant lesson planning, and effective peer review training will also serve as a jump-start for our partnering district to explore an online platform for future online student course development and further professional development. This exploration and training will also be shared with Blackford County Schools. Thus, continuing the benefit of our partnership beyond the grant for our students and staff.